



National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
Houston, Texas



Brain ease

JSC employees and high school students build a robot in six short weeks. Photos on Page 3.



Rodeo welcome

Fans at the Houston Livestock Show and Rodeo give a warm welcome to Russian officials. Photo on Page 4.

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Space walkers report view awesome

By Karen Schmidt

The STS-82 astronauts gave high praise to the instrument they worked on and the teamwork that made the mission possible.

Commander Ken Bowersox, Pilot Scott Horowitz and Mission Specialists Mark Lee, Joe Tanner, Greg Harbaugh, Steve Smith and Steve Hawley expressed deep gratitude upon their return to Ellington Field last week to their fellow astronauts and the support teams that gave them the opportunity to work on the Hubble Space Telescope.

"While doing the magnetometers Jeff (Hoffman) asked me which was closer the Earth or the payload bay," Harbaugh said. "It was a magical moment because the Earth was there in all its glory and it was hanging above my head. I almost felt like I could touch it from there. It was an absolutely astounding view, no telescope, just me and our home planet and the universe. It is something I will never forget."

"STS-82 is over, but the mission of Hubble goes on," Hawley said. "Hopefully it will go on for months, years, maybe decades enabled by subsequent servicing missions such as 61 and 82. In those years, Hubble will revolutionize our understanding of the universe and will answer questions that previously we thought were unanswerable. I never thought I would see in my lifetime the possibility to really answer questions such as how old is the universe, how big is the universe are there other planets out

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Above: Commander Ken Bowersox is welcomed home by his wife Ann, and sons John and Matthew after successfully capturing, repairing and redeploying the Hubble Space Telescope. Right: Mission Specialist Steve Smith holds daughter Shannon during welcome home ceremonies at Ellington Field. The STS-82 crew conducted five space walks to refurbish Hubble and give the orbiting telescope an expanded view of the universe.

JSC Electronic Photos by Mark Sowa



NASA on course, Dailey reports at JSC all-hands

NASA Deputy Administrator Jack Dailey told JSC employees Tuesday that President Clinton's latest budget submission for NASA is clear evidence that the agency is on the right track with its planning efforts.

Further evidence of this is the "how to" video based on NASA's strategic planning, which was presented to the standing room only crowd in Teague Auditorium, has been chosen by the President's Management Council as the management orientation video for all new cabinet-level appointees.

"We have been given a signal now that we're on course, we're doing what the country wants us to do in terms of both the Administration and the Congress and that we are going to be monitored now like everyone else to make sure that we do it," Dailey said. "They believe we have done what we're supposed to do as an agency to retain our relevance to the country, and they are signaling that they're ready to support us."

Dailey and NASA Deputy Administrator for Space Flight Richard Wisniewski were in Houston to "roll out" the agency's new Strategic Management Handbook and explain how the Human Exploration and Development of Space Enterprise,

of which JSC is a key stakeholder, fits into the agency's overall planning.

Much of the work to build the current plan has been driven by significant budget cuts that, over the past several years through a series of top-to-bottom reviews, have shifted NASA's budget from emphasizing operations back to one that is anchored in research and development. The agency has concentrated on planning programs that are relevant to Americans, balanced across the agency and that promote stability in funding, Dailey said.

"We now have the plan, we know where we're going and we know how we're going to try to get there," he said. "Our budgets are aligned with

it and we need to make sure the plan stays current and describes the right things for us to be doing as an agency."

Much of the responsibility for executing the plan falls on the shoulders of JSC, which has been designated as the lead center for the space shuttle, the International Space Station and space operations, he said.

With that authority, however, comes a significant amount of responsibility, he added.

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Dailey

Crew extinguishes fire on Mir; operations back to normal

A problem with an oxygen-generating device on the Russian Mir Space Station Sunday night set off fire alarms and caused minor damage to some hardware on the station but the smoke cleared by late Monday and operations returned to normal.

No injuries to any of the six crew members on board were reported. The fire, located in the Kvant 1 module, began at 10:35 p.m. Sunday, Moscow time, and burned for about 90 seconds. The crew was exposed to heavy smoke for five to seven minutes and donned masks in response. After completing physical exams of everyone on board, U.S. astronaut Jerry Linenger, a physician, reported that all crew members are in good health.

"Jerry talked directly to Moscow and told

them everybody was fine, their lungs were clear and that he felt fine and that the crew was doing well overall," said Frank Culbertson, director of the Phase 1 Shuttle-Mir Program. "Jerry sounded very calm, as he always does, and seemed very well in control of the situation as did the Russians."

Lithium perchlorate candles are burned to generate supplemental oxygen when more than three people are on board the space station. The oxygen-generating candles usually burn for five to 20 minutes. Russian officials believe the problem began when a crack in the oxygen generator's shell allowed the contents of the car-

tridge to leak into the hardware in which it was located. Crew members extinguished the fire with foam from three fire extinguishers, each containing two liters of a water-based liquid.

The damage to some of Mir's hardware resulted from excessive heat rather than from open flame. The heat destroyed the hardware in which the device, known as a "candle," was burning, as well as the panel covering the device. The crew also reported that the outer insulation layers on various cables were melted by the heat. It is reported by Russian flight controllers that all Mir systems continue to operate normally, however.

In addition to Linenger, the Mir crew members include Mir 22 cosmonauts Valery Korzun and Alexander Kaleri, Mir 23 cosmonauts Vasily Tsibliev and Alexander Lazutkin, and Cosmonaut Researcher Reinhold Ewald.

As operations returned to normal later in the week, Korzun, Kaleri and Ewald began making preparations to return to Earth on Sunday. Korzun and Kaleri wrap up a six-month mission on the Russian outpost as Ewald returns home with three weeks of scientific experiments.

Officials are evaluating possible impacts to the mission and its science activities. The burned panel and other materials may be returned to Earth with Korzun, Kaleri and Ewald on Sunday for further analysis.



Columbia's payload bay gets cleaning before move to VAB

By James Hartsfield

Preliminary inspections show *Discovery* is in excellent condition following the addition of more than 4.1 million miles to its odometer on STS-82, and attention is now focusing on *Columbia*, being readied for a 16-day flight on STS-83 in early April.

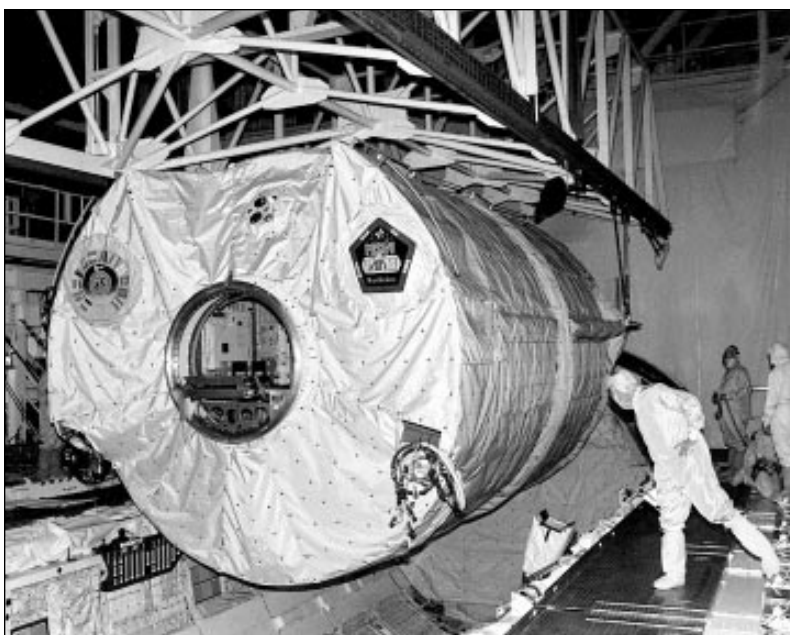
Preparations of *Columbia* are on target for a launch perhaps as early as April 3 on the first Microgravity Science Laboratory mission. This week, the payload bay received a final cleaning and the doors were closed. *Columbia* is to be moved to the Vehicle Assembly Bldg. on Tuesday to be mated with the STS-83 fuel tank and solid rock-

ets. Roll out of the shuttle to Launch Pad 39A is scheduled for about March 10.

The STS-83 crew—Commander Jim Halsell; Pilot Susan Still; Mission Specialists Janice Voss, Don Thomas and Mike Gernhardt; and Payload Specialists Roger Crouch and Greg Binter—are to travel to KSC for a dress rehearsal countdown with the launch team March 13-14.

Elsewhere, *Atlantis* is in the Bay 3 shuttle processing hangar being readied for a mid-May launch on STS-84, the sixth Mir docking mission. STS-84 will bring home astronaut Jerry Linenger from his stay aboard the

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NASA Photo KSC-97EC-0244

Kennedy Space Center technicians install the Microgravity Science Laboratory into *Columbia*'s payload bay. The MSL will fly for the first time on STS-83 in April.

Smith to take helm at USA

Paul Smith will take over the reigns of United Space Alliance on April 1 when President and Chief Executive Officer Kent Black retires.

Smith, currently president of Boeing North American's Rocketdyne Division, brings 32 years of space-related experience to USA. Most recently he was responsible for directing the space shuttle main engine program, the International Space Station's electrical power system, liquid-fueled booster engines for expendable launch vehicles and directed energy systems.

"We couldn't have chosen a better individual possessing stronger traits to lead the transition of the space shuttle management responsibility from NASA to USA," said Peter Teets, president and chief operating

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